Remote switching machines with a SMS text from your mobile phone!

Remote Monitoring your assets in the worldwide by your mobile Phone!

GSM SMS Controller
GSM SMS Alarm Unit

S130 S140 S150

User Manual

Ver 1.20 Date Issued: 2010-09-14

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This handbook has been designed as a guide to the installation and operation of S130,S140,S150 GSM SMS Controllers. Statements contained in the handbook are general guidelines only and in no way are designed to supersede the instructions contained with other products.

We recommend that the advice of a registered electrician be sought before any Installation work commences.

Model List

Model No.	Differences
S130	2 Digital inputs, 1 Alarm Link relay output, 1 separate relay output for SMS Commands.
S140	4 Digital inputs, 1 Alarm Link relay output, 1 separate relay output for SMS Commands.
S150	8 Digital inputs, 1 Alarm Link relay output, 1 separate relay output for SMS Commands.

SMS Command List

SMS COMMAND	Functions & Actions
AA	To arm the system, in this case, any sensor triggered will alarm.
BB	To disarm the system, in this case, any sensor triggered will not alarm.
CC	To switch ON the separate relay output
DD	To switch OFF the separate relay output
EE	Inquiry the GSM SMS Controller Status

The commands should plus Password, the format is Password+SMS Command. i.e.: if the password is 1234, then you can send 1234AA to arm, 1234BB to disarm.

1. Brief introduction

The GSM SMS Controller is a very simple device which can be used for authorized door access, controlling gates, switching of remote equipments, car parking systems. Actually the GSM SMS Controller can be used in places which require turning ON/OFF your system, machines, equipments remotely with a SMS text from your mobile phone and protect your assets.

Moreover, the GSM SMS Controller with multi-digital inputs for digital inputs, when any one of the inputs triggered, will start the siren or switch on the light automatically. in the meanwhile, the GSM SMS Controller will send SMS Alert the to owners immediately. This is very useful if you need protect your assets with low cost solution.

The GSM SMS Controller suitable for below applications:

1. *Security Alarm System applications;*
2. *Supervision and monitoring alarm systems;*
3. *Automatic monitoring system;*
4. *Vending Machines security protection;*
5. *Pumping Stations, Tanks, Oil or Water levels;*
6. *Buildings and Real Estate;*
7. *Weather Stations;*
8. *River Monitoring and Flood Control;*
9. *Oil and gas pipelines;*
10. *Corrosion protection*
11. *Temperatures, water leakage applications;*
12. *Wellheads, boat, vehicle;*
13. *Energy saving, street lights control system;*
14. *Valve controls;*
15. *Transformer stations;*
16. *Unmanned machine rooms;*
17. *Control room application;*
18. *Automation System, M2M;*
19. *GSM Access Control System, GSM Gate Opener, etc.*

2.Safety Directions

Safe Startup
Do not use GSM SMS Controller when using GSM equipment is prohibited or might bring disturbance or danger.

Interference
All wireless equipment might interfere network signals of GSM SMS Controller and influence its performance.

Avoid Use at Gas Station
Do not use GSM SMS Controller at a gas station. Power off GSM SMS Controller when it near fuels or chemicals.

Power it off near Blasting Places

Please follow relevant restrictive regulations. Avoid using the device in blasting places.

Reasonable Use

Please install the product at suitable places as described in the product documentation. Avoid signal shielded by covering the mainframe.

Use Qualified Maintenance Service

Maintenance can be carried out only by qualified maintainer.

3. Standard Packing List

Control Unit X1, GSM ANT X1, User Manual X1(CD), Connectors, AC/DC Adaptor X1.

Optional Accessories: (Wired Sensors)

PIR Motion Sensor, Glass Break Sensor, Magnetic Window Sensor, Temperature Sensor, Infrared Beam Fence, Vibration sensor, Water level sensor, Siren, etc.

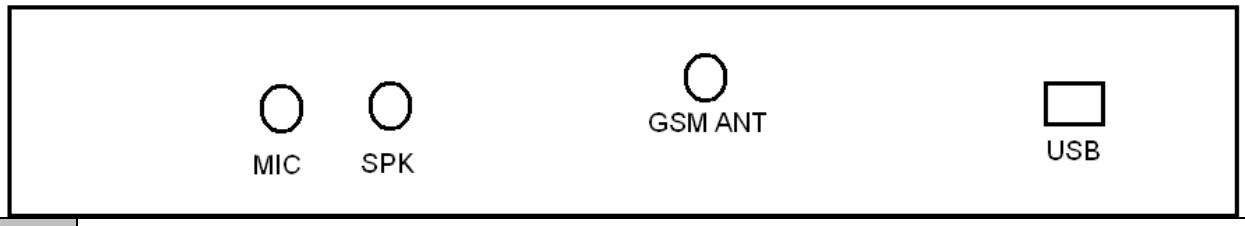
4. Physical Layout

4.1 Control Unit physical layout

LED Instruction

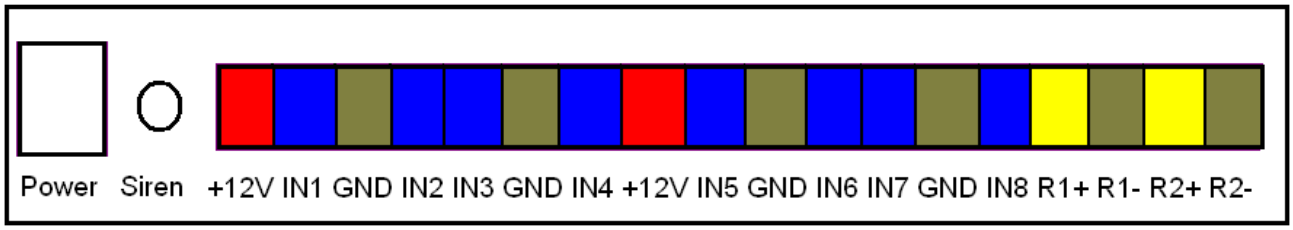
GSM	GSM Module indicator, registering will quickly flick, registered successful will slowly flick.
RELAY	Output relay indicator, when any output relay closed, it will be on; when relay opened, will be off.
STATUS	Arm Indicator, on is armed, off is disarmed;
Alarm	Alarm Indicator, on is alarming, off is normally;

Interface 1 Instruction



MIC	For listening in the sounds around the GSM SMS Controllers while alarm, the Microphone is needn't power, is the same type for the computer.
SPK	For two way voice communication. When the authorized number dial in, the unit will check the incoming number, if matched, then can create two-way voice communication.
GSM ANT	Connect the GSM ANT, if the GSM signal is not strong, then please change the 3dB GSM ANT.
USB	Connect to the computer, for setup the unit parameters.

Interface 2 Instruction



POWER	External Power Connector, Connect to 2A@12V DC power through AC/DC Adaptor.
SIREN	Will start for 60seconds when alarm. The siren or strobe siren should be <12V DC.
+12V	+12VDC@1A power output for wired detectors.
IN1	Digital input 1, connect to one wire of the wired Detector.
GND	Ground point, connect to another wire of the wired Detector or -12VDC.
IN2	Digital input 2, connect to one wire of the wired Detector.
IN3	Digital input 3, connect to one wire of the wired Detector.
GND	Ground point, connect to another wire of the wired Detector.
IN4	Digital input 4, connect to one wire of the wired Detector.
+12V	+12VDC@1A power output for wired detectors.
IN5	Digital input 5, connect to one wire of the wired Detector.
GND	Ground point, connect to another wire of the wired Detector or -12VDC.
IN6	Digital input 6, connect to one wire of the wired Detector.
IN7	Digital input7, connect to another wire of the wired Detector.
GND	Ground point, connect to another wire of the wired Detector.
IN8	Digital input 8, connect to one wire of the wired Detector.
R1+	Built in 240VAC@3A rated relay output, connect to the device positive electrode.
R1-	Built in 240VAC@3A rated relay output, connect to the device negative electrode.
R2+	Built in 240VAC@3A rated relay output, connect to the device positive pole.
R2-	Built in 240VAC@3A rated relay output, connect to the device negative electrode.

5. Features

1. 1 relay output (240VAC@3A) can be switched ON/OFF by sending a SMS text;
2. 1 relay output (240VAC@3A) can be switch on 4minutes if any inputs triggered;
3. 2/4/8 Alarm logic inputs, NC or NO and EOL is optional;
4. 3 SMS Alert numbers and 5 auto-dial numbers can accept to the alarm message;
5. Two-way voice communication by external microphone and speaker;
6. Supports armed, disarmed, inquiry status, switch on or off relay output by SMS Commands;

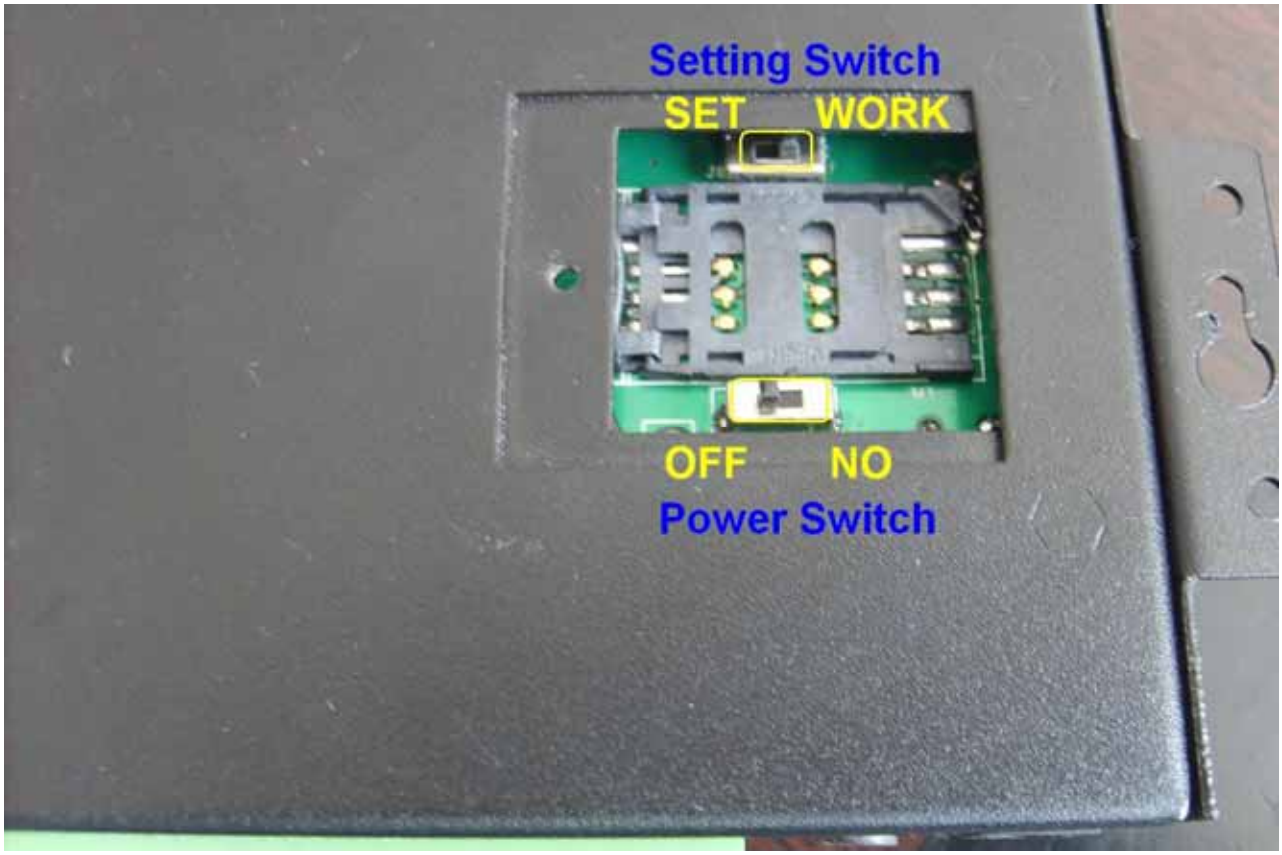
7. Password protected, prevents unauthorized user;
8. Can be set up and programmed from PC Programmer by USB cable;
9. Time stamped alarm messages.
10. Backup rechargeable battery inside, can work for 24hours when power off.
11. Can be operated from anywhere, no distance limit;
12. Based on GSM Network, applied to many applications.

6. Settings

The GSM SMS Controller is for user-friendly design. The user can setup it by the PC programmer through USB cable. The GSM SMS Controller can not setup by SMS Commands.

Tips!

1) In order to forbidden the intruders power off the unit, we equipped the power switch inside, it is nearby the SIMCard socket, please pay attention to it, and don't tell others of this. Turn it towards inside is off, turn it towards outside is on. And when setup the unit, please put the Setting switch to SET position, after setup, switch it to WORK Position. Please see below photo.

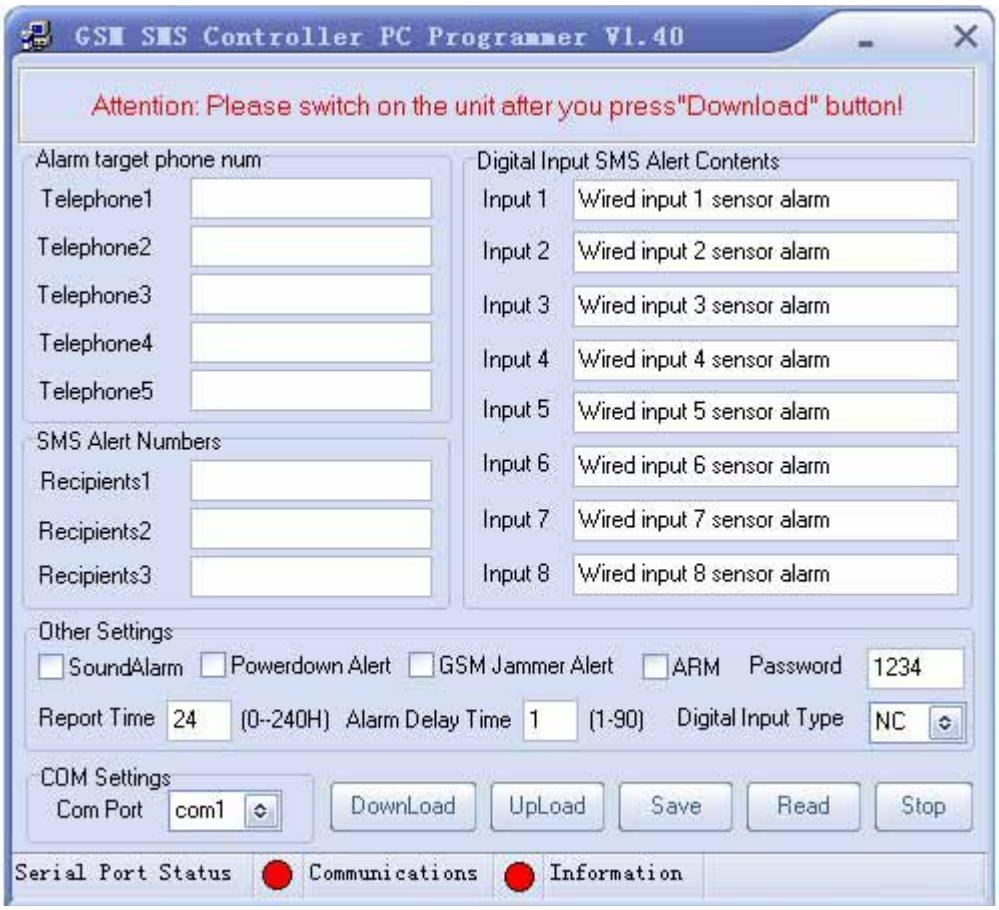


2) Please insert the SIMCard firstly, and install the GSM Antenna, please power on to check the LEDs can work or not, then power off it before you program it by PC Programmer.

3) The default password is 1234, you can modify it by enter the new password in the PC Programmer.

4) Two way communication: While the authorized users incoming call, the GSM SMS Controller unit will automatically answer the call, then the two-way voice communication will be created. If you want to test the two way voice communication, please make sure the other phone is away from the GSM SMS Controller unit at least 500meters. Otherwise, the near-cross will make lots of noise interference.

The PC Programmer Interface



Please following the below steps one by one to setup it, otherwise you can not setup it successfully.

Step1: Please install the USB Driver to the computer from the CD firstly;

Step2: Please insert the SIMCard into the GSM SMS Controller carefully;

Step3: Please running the PC Programmer, needn't installed it;

Step4: Please connect the GSM SMS Controller to the computer through USB cable, but please don't switch on the GSM SMS Controller, otherwise, the setup will be failure;

Step5: Please setup the GSM SMS Controller parameters;

Step6: After you finished the setup, then press **"Download"** button then switch on the GSM SMS controller, after 2Seconds, it will alert the Setup successful. If it hasn't prompted the setup successful, then means the setup is failure, please check the Com port and USB connection. You can change the Com Port to try it one by one, if the Communication LED sign is green after you press the **"Download"** , then means the Com port is correct, otherwise, it is incorrect, please use the dropdown menu to change it.

Step 7: Power off the unit then remove the USB cable. Then power on the Unit to finish the setup.

If it hasn't prompted the setup successful, then means the setup is failure, please check the Com port and USB connection, then try to repeat the Step1~Step6 again.

Items	Description
Alarm Target Ph. No.	Please add the country code, e.g.: +86 or 0086 in China. When alarm, the unit will call these numbers one by one after sent out SMS Alarm message. Please see below tips.
SMS Alert Numbers	Please add the country code, e.g.:+86 or 0086 in China. When alarm, the unit will send related Digital Input SMS Alert Content to these numbers one by one firstly.
Digital Input SMS Alert Contents	These words or sentences will be sent to the SMS Alert Numbers once the related inputs triggered. Max. Characters: 34.
Sound Alarm	Select it to switch on the siren for 60 seconds when Alarm occurrence.
Power Down Alert	Select it to send SMS alert when external AC Power failure more than 30 minutes.
GSM Jammer	Select it to make siren sound and alarm-link output relay close for 4minutes when the unit detected no GSM signal for more than 90 seconds.(Usually please don't enable it.)
Arm	Select it to set the unit to arm mode once power on. in this case, any sensor triggered will alarm. The system will send out the preset SMS text to SMS alert numbers, and dial the Alarm target phone numbers one by one, in the meantime, the siren will sound 1 minutes and the alarm-link output relay will switch on 4 minutes. Otherwise, the system will in disarmed mode after power on.
Password	To verify the SMS commands from the authorized users and modify new password.
Report Time	Fill it to setup the Report time gap, Range: 0~240Hours. The unit will automatically send its status to SMS alert numbers according to this setting.
Alarm Delay Time	To setup the delay time after any sensor triggered. The range is 0~90Seconds.
Digital Input Type	NC: Normal Close; NO: Normal Open; EOL: End of Line, Means must be connection in series with a 2.2K resistor between the GSM SMS controller and digital detector.
Com Port	Select the Com port to communicate between GSM SMS Controller and Computer.
Download	Download the settings from computer to GSM SMS Controller.
Upload	Upload the settings from GSM SMS Controller to computer.
Save	Save the settings to computer.
Read	Read the settings from the Saved file in the computer.
Stop	Stop the communication between the computer and GSM Controller.

Notice:

1. *In some GSM operators they use different SMS protocols, if the unit can't return the SMS confirmation is normally. It is not product problem. Also, you can try to add the country code before the number, see the below settings:*

For example:

In China, the country code is **+86**, or **0086**.

The user cell phone number is **13570810254** and has been assigned as a SMS Alert number, the simcard number in the panel is **13512345678**.

Problem 1: Alarm but the user hasn't received the SMS Alert.

Solution: Please plus the country code while you setup the 13570810254 as SMS Alert number, means setup **+8613570810254** to instead of the **13570810254**.

Problem 2: The user number can receive the SMS Alert message from alarm panel, but the alarm panel can not receive the commands from the user number.

Solution: Please add country code to the SIMCard number in the alarm panel. Means send sms commands to **+8613512345678** to instead of **13512345678**.

Solution 3: When you use cell phone dial another one, what number it will be displayed then you can set the displayed number as dial numbers; when you use cell phone send SMS to another cell phone, what number it will be displayed then you can set the displayed number as SMS Alert number, just use the "+" to replace the "00", also, you can try the "00".

7. Operating Instructions

The User can Arm/Disarm/Inquriy system status/Switch on or off the independent output relay by sending SMS to the Control unit. The SMS Commands are below:

Notice:

The system will carry out the commands immediately (with no delay) after the Control Unit receive this SMS command.

7.1 Armed

xxxxAA
"xxxx" stands for the password (1-4 digits).
Return SMS
Armed Mode activated.

Example
1234AA

When the Password is 1234

7.2 *Disarm*

xxxxBB
"xxxx" stands for the password (1-4 digits).
Return SMS
System deactivated.

Example
1111BB

When the Password is 1111

7.3 *Switch On the independent output relay*

xxxxCC
"xxxx" stands for the password (1-4 digits).
Return SMS
Output Relay Closed.

Example
1111CC

When the Password is 1111

7.4 *Switch OFF the independent output relay*

xxxxDD
"xxxx" stands for the password (1-4 digits).
Return SMS
Output Relay Opened.

Example
1111DD

When the Password is 1111

7.5 *Inquiry System Status*

xxxxEE
"xxxx" stands for the password (1-4 digits).
Return SMS
Armed or At House or Disarmed
AC Power is Ok or AC Power is failed
GSM Value is 17 or other value
Output Relay is Closed or Output Relay is opened

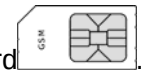
Notice:

The Output relay status in the Return SMS is the independent output relay status. It is not the alarm link Output Relay Status.

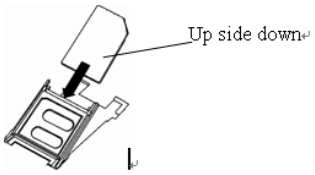
8. Installation

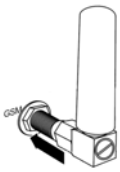
Before installing the control unit and sensors and sirens, please help to test the system firstly, including wired sensor, power supply, gsm signal, etc.

8.1 *Insert SIMcard into Control Unit*

In the backside of the control unit, please install the GSM SIM card 

. The GSM ANT must be Vertical installation to ensure it in good working condition.





8.2 Connecting the Wired Sensors and Electricity equipments

Please help to see below wiring diagram, then fixed the related wired sensors, the sensors connect to the related digital inputs.

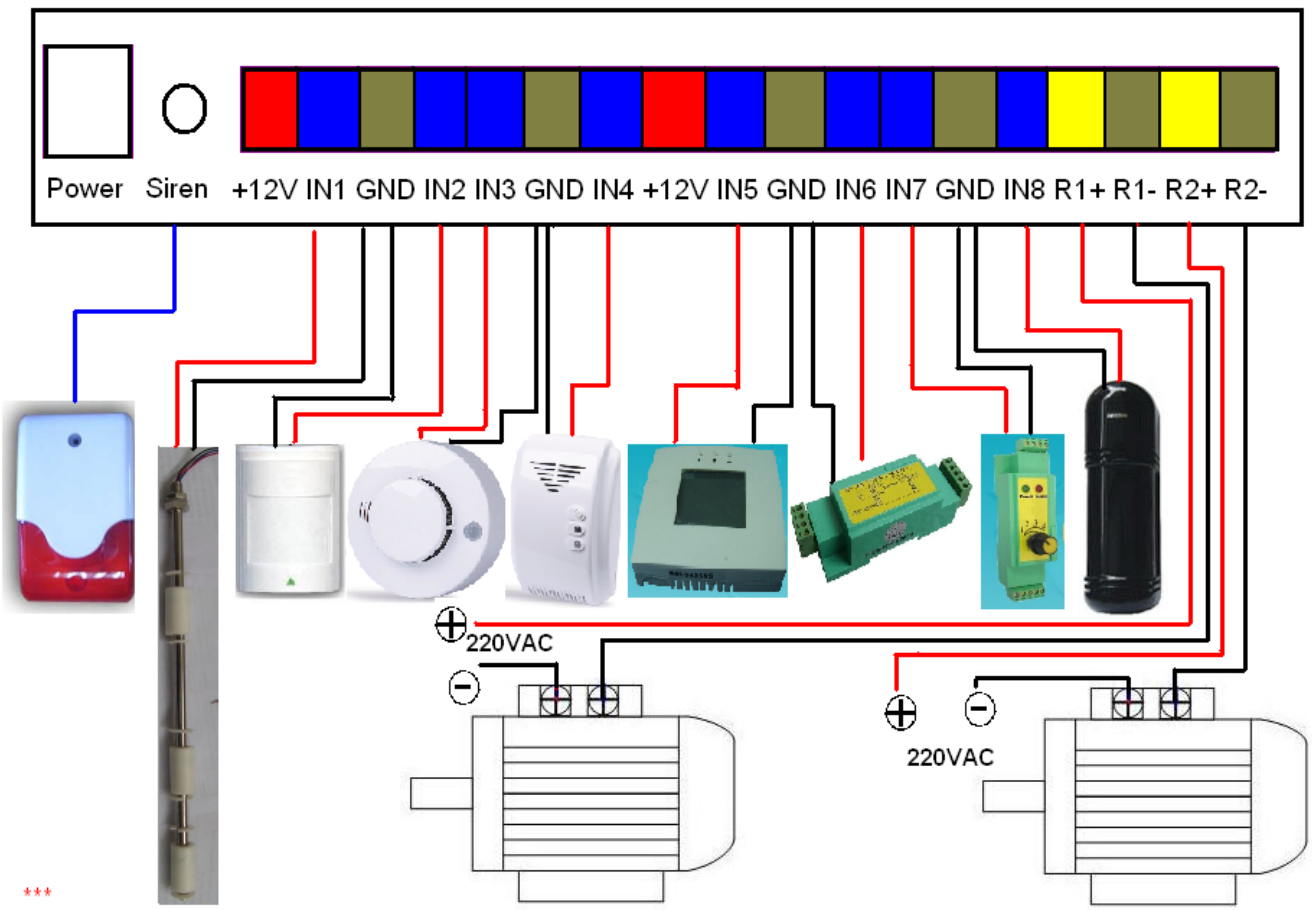
Tips!

1) *Please setup the NC, NO, EOL type in the PC Programmer correctly;*
2) *If you setup the Nodes type as NC(Default),the no-use inputs must be with short-circuited by wires, and the sensor type must be NC. Please see below diagram.*
3) *If you setup the input type as EOL, then please contact a 2.2K Resistor in series with every inputs, if you don't connect the sensor to the inputs, please connect a 2.2K Resistor in series to instead of it . Moreover, only the digital detector is NC type*

can use in EOL mode. Please see the below diagram.

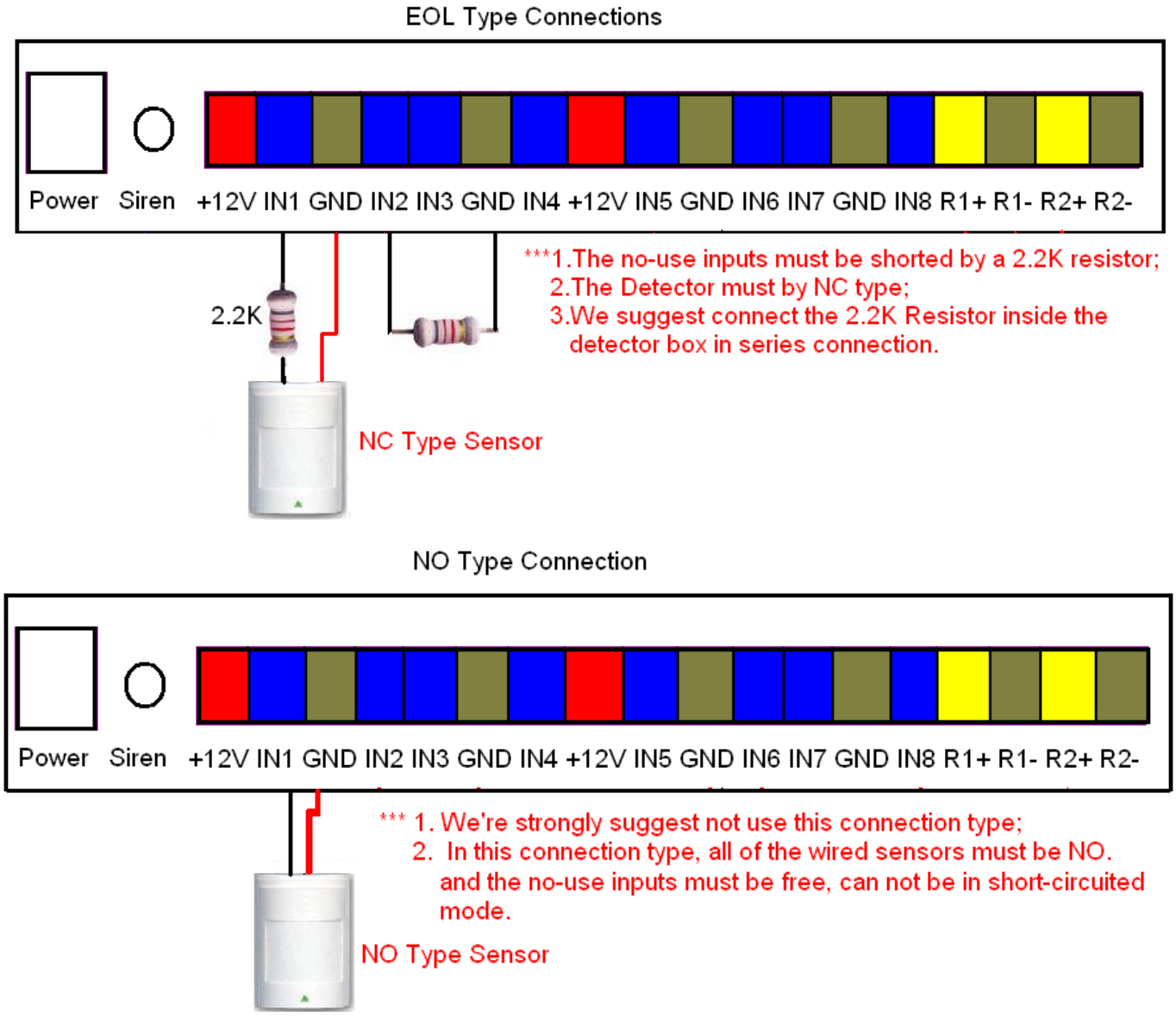
4) *If you setup the input type as NO, then please keep the two points of the inputs by free , and the sensor type must be NO. Please see the below diagram.*
5) *The Unit built-in 240VAC@3A rated relay. Please make sure the power cord rated while you connect to equipment device. also, please make sure the power consumption is less than 250W for long time working. If you need heavy equipment, please connect an additional relay ;*
6) *The R1+ and R1- is for alarm-link output, when the system alarm, will close for 4 minutes, the rated output power is 700W. If you need heavily equipment, please connect an additional relay .*
7) *The R2+ and R2- is the relay output for SMS Command, CC is close, DD is open, EE is inquiry the status.*
8) *The +12VDC is for the Detectors, if the detectors need 12VDC power, then please contact it to the +12VDC. The 12VDC power is from external power, not from backup battery. So please note: When AC power failure, the +12VDC point will no power supply.*

NC Type Connection



***

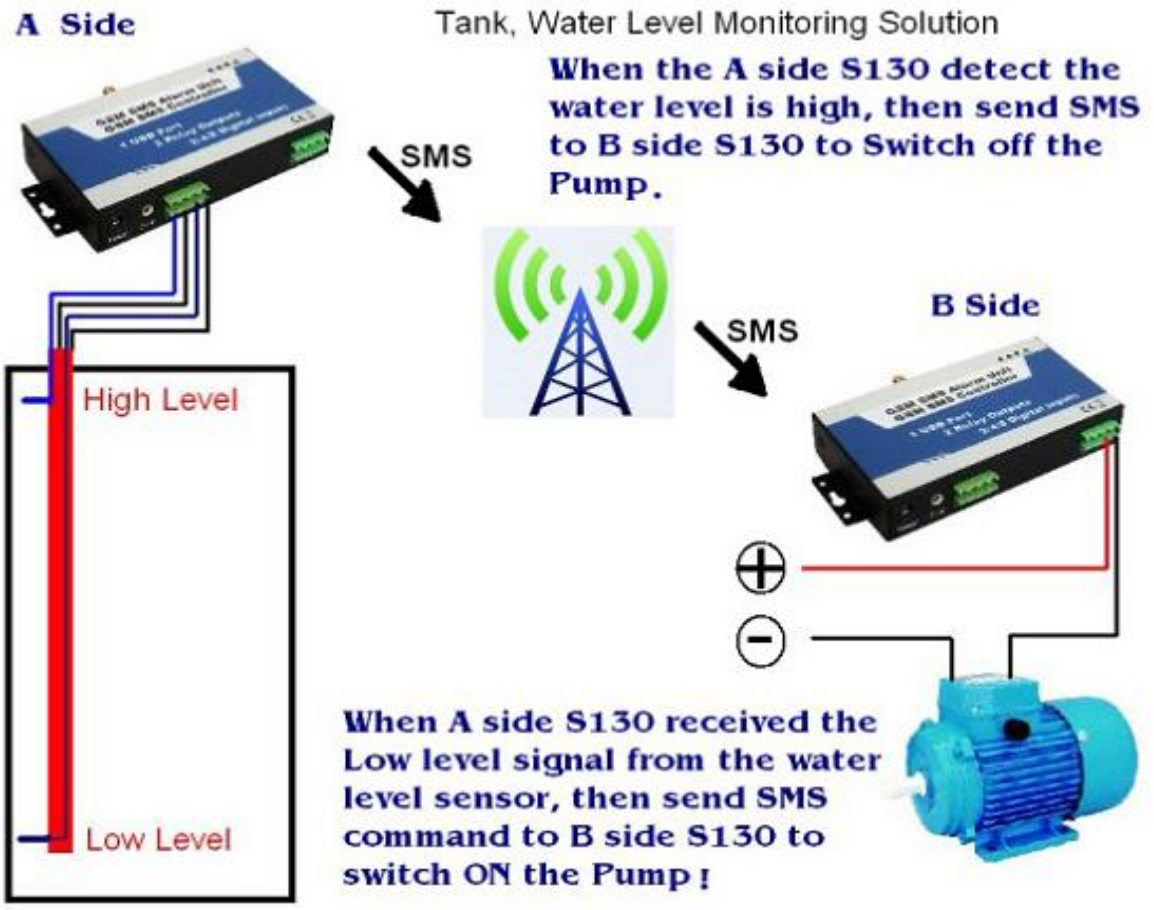
1. The two +12V are power source for wired sensors; 2. The R1+ R1- is the alarm link output relay;
3. The R2+ R2- is a seperate output relay, which can be switched ON/OFF by SMS Commands.
4. The no-use inputs must be keep in short-circuited by wires.


EOL Type Connections
Power Siren +12V IN1 GND IN2 IN3 GND IN4 +12V IN5 GND IN6 IN7 GND IN8 R1+ R1- R2+ R2-
2.2K
***1.The no-use inputs must be shorted by a 2.2K resistor;
2.The Detector must by NC type;
3.We suggest connect the 2.2K Resistor inside the detector box in series connection.
NC Type Sensor
NO Type Connection
Power Siren +12V IN1 GND IN2 IN3 GND IN4 +12V IN5 GND IN6 IN7 GND IN8 R1+ R1- R2+ R2-
*** 1. We're strongly suggest not use this connection type;
2. In this connection type, all of the wired sensors must be NO.
and the no-use inputs must be free, can not be in short-circuited mode.
NO Type Sensor

8.3 Typical application

One of the typical application of the GSM SMS Controller is for automatically water tank monitoring and control solution. Please help to see below diagram. Also it can use to lots of other solutions. E.g.:

1. *Security Alarm System applications;*
2. *Supervision and monitoring alarm systems;*
3. *Automatic monitoring system;*
4. *Vending Machines security protection;*
5. *Pumping Stations, Tanks, Oil or Water levels;*
6. *Buildings and Real Estate;*
7. *Weather Stations, River Monitoring and Flood Control;*
8. *Oil and gas pipelines, Corrosion protection*
9. *Temperatures, water leakage applications, Wellheads, boat, vehicle;*
10. *Energy saving, street lights control system, Valve controls;*
11. *Transformer stations;*
12. *Unmanned machine rooms, Control room application;*
13. *Automation System, M2M;*
14. *GSM Access Control System, GSM Gate Opener, etc.*


A Side
Tank, Water Level Monitoring Solution
When the A side S130 detect the water level is high, then send SMS to B side S130 to Switch off the Pump.
SMS
SMS
B Side
High Level
Low Level
When A side S130 received the Low level signal from the water level sensor, then send SMS command to B side S130 to switch ON the Pump!

Explanation:

1) *Use the water level sensor (WL-03) to detect the water level, it can detect the low level and high level, two wires for low level, connecting to S130 input 1, two wires for high level, connecting to S130 input 2.*

2) *Set the SIMCard Number in B side S130 as the first SMS Alarm number in A side S130, and modify the SMS Alert content as **1234CC** (1234 stands for password) to input 1, **1234DD** to input 2. So when Low level detected, the A side S130 will send **1234CC** command to B side S130 to switch ON the Pump, when high level detected, will send **1234DD** to B side S130 to Switch OFF the Pump. Means the A side alarm SMS message as the B side S130 Command.*

8.3 Install the Mainframe

The mainframe should be installed in the position that person can not get it, and there're with a power source as well as enough GSM signal coverage.

8.4 Install the Speak and Microphone to the Mainframe

The GSM SMS Controller allow the authorized users call in to create two way voice communication, also, when the system alarm, the authorized number can listen in the on-site sounds.

While you install the Microphone and Speaker, please make sure keep it away from the GSM SMS Controller at least 1meters, and far from the siren if possible.

9. Technical specifications

Rated Voltage: 12VDC@ 2A

Working temperature: -10℃～+60℃

Storage temperature: -20℃～+60℃

Relative humidity: 10-90%, No condensation

GSM frequency: 900/1800/1900MHz or 850/900/1800/1900Mhz

Communication protocol: GSM PHASE 2/2+ (include data service)

Digital inputs: 2 / 4 / 8

Backup Rechargeable Battery: 24Hours in standby mode.

Related Voltage of the Output Relay: 3A/240V AC

Net Weight: 0.60Kg

10. Warranty

1) This system is warranted to be free of defects in material and workmanship for one year from the date of purchase.
2) This warranty does not extend to any defect, malfunction or failure caused by abuse or misuse by the Operating Instructions. In no event shall the manufacturer be liable for any alarm system altered by purchasers.

11.Trouble Shooting Guide

PROBLEM	CAUSE	POSSIBLE SOLUTION
GSM Module initialization failed	1) Backup battery with low voltage; GSM Module connection loose in transportation; 2) GSM Signal is too weak.	1) Please contact the AC Power; 2) Please help to take the panel to a mobile phone repairmen store, and then ask the engineer to check the GSM Module socket and the GSM Module connection; 3) Please change another position to install the alarm panel.
Automatically Restart	1) Backup battery with low voltage.	1) Please help to contact the AC Power.
False Alarm	1) PIR Motion sensor installation incorrect; 2) NC/NO/EOL is incorrect.	1) Please see the PIR Motion sensor installation user manual carefully; 2) Please check the detector NC/NO type, and you're sure connect a 2.2K Resistor in series in the un-use input ports.
Alarm without SMS /Dial/ No action after send SMS	1) GSM Operator communication protocol; 2) Haven't setup SMS Alert/Auto dial Numbers. 3) Caps Lock letters in the SMS.	1) Please setup the SMS Alert Numbers; 2) Please help to see the sample of setup the telephone numbers; 3) Please check the commands with CAPS LOCK and correct format. 4) Also, please help to change another GSM Operator SIMCard to test it.

The End!